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10/501583

DT04 Rec'd PCT/PTO 14 JUL 2004

EUROPEAN PATENT OFFICE

(International Preliminary

Examining Authority)

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COPY

Madrid, 5 March 2004

By DHL

PCT - CHAPTER II - INTERNATIONAL PRELIMINARY EXAMINATION  
VERY URGENT - PLEASE, DELIVER IMMEDIATELY

Re: International application no. PCT/ES03/00009  
Applicant(s): BRAKE PLUS, S.L., *et al.*  
O/Ref.: PXWO00001/2003

Dear Sirs:

With reference to the first Written Opinion issued on the above-captioned application (date of mailing: 10 February 2004), we herewith submit the following:

(1) First of all, we thank the Examiner for his/her detailed analysis of the claims. In order to comply with the Examiner's suggestions, we have, basically, amended claim 1 as suggested by the Examiner. However, we have slightly modified the wording, in order to further improve the clarity of the added feature.

We enclose:

- (A) CLAIMS AMENDMENTS EXPLANATION SHEET(S) a-b, (expressions crossed out are deleted, underlined expressions are added)
- (B) Replacement sheets 8-9, comprising retyped claims including the specified amendments.

(2) Most of the amendments are self-evident. Basically, we have used the wording suggested by the Examiner, based on lines 7-11 and 15-16 of page 4 of the English translation as originally filed, although we have chosen not to use the expression "regarding determined points of the characteristic curve of the wave generated"; instead, we have used an alternative wording which, in our opinion, is even clearer.

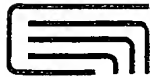


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EXCELENCE



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Obviously, the relevant issue is that the detector assemblies detect the light at different wavelengths, and the intensities at said wavelengths are detected and analysed by the system, by comparison (in one way or another) with pre-stored values, whereby the system can distinguish between authentic and counterfeit documents.

We consider that the alternative wording used by us is clearly supported by the description (for example, by the paragraphs referred to by the Examiner) and, further, by, for example, figure 3.

All amendments made are considered to be directly and unambiguously derivable from the application documents as originally filed. The application as amended is not considered to contain subject-matter that extends beyond the content of the application as filed.

However, should the Examiner not agree with us, we should welcome an opportunity to discuss an alternative wording of claim 1.

(2.1) In what regards any subject-matter considered to have been withdrawn from the above-captioned application, either explicitly or implicitly, the applicant herewith reserves himself the right to restore said subject-matter to the application and/or to file (in the respective national phases) a divisional application containing all or part of said subject-matter.

(3) We should very much wish to obtain a favourable International Preliminary Examination Report and we believe that the claims filed herewith should be a suitable basis for such a report. However, should the Examiner not find the claims to be sufficiently clear or sufficiently delimited with respect to the cited prior art, or should the Examiner have doubts regarding support for the amendments in the application documents as originally filed, WE SHOULD VERY MUCH APPRECIATE A FURTHER WRITTEN OPINION, IN ORDER TO BE ABLE TO CONSIDER WHETHER FURTHER AMENDMENTS COULD BE APPROPRIATE.

Of course, should the Examiner consider that an oral discussion could be helpful, we should be pleased to discuss any outstanding issues with the Examiner over the telephone; our telephone number is +34 91 806 5600.

Respectfully submitted,

Angel Dávila Baz

Enc.: as specified above + acknowledgement of receipt form

## CLAIMS

1.- A system for recognizing documents provided with a security mark comprising a substance which is excitable when a light coming from a corresponding light source is emitted on it so as to emit light at different wavelengths, the system

5 comprising

a monochromatic light source for exciting the substance; and

at least two detector assemblies (3) for detecting light emitted by the excitable substance of the security mark of the document to be recognized;

each detector assembly (3) being associated to a system for electronic  
10 processing defined by a filter (7) and an amplifier (8), connected to a single microprocessor;

each detector assembly (3) being integrated in a body (9) that groups together all the detector assemblies (3) for detecting the light emitted by the excitable substance of the security mark, said detector assemblies being directed towards a common point,  
15 in order that the intensities of the light emitted by the mark, at different wavelengths ( $\lambda_1$ - $\lambda_9$ ), be detected by the detector assemblies, the microprocessor being arranged to analyze the detected light intensities at different wavelengths comparing them with a set of values stored in a memory of the microprocessor, for the purpose of determining whether the document recognized is an authentic document or a counterfeit document.

20 2.- A system according to claim 1, wherein the light source comprises a diode laser (1) of small dimensions and with focused light, so that all of the light output is at a narrow wavelength and at one point.

3.- A system according to claim 1 or 2, wherein each detector assembly (3) is defined by a photodiode (4), a filter (5) and a lens (6), duly encapsulated.

25 4.- A system according to claim 3, wherein the filters (5) are selected so that different detector assemblies (3) detect the intensity of light corresponding to different wavelengths ( $\lambda_1$ - $\lambda_9$ ).

5.- A system according to any of the preceding claims, wherein the elements forming part of the system are arranged so that the detection path length is very short,  
30 whereby a better optical tolerance with regard to the banknote pass distance, and a small-sized and low cost equipment, are obtained.

6.- A system according to any of the preceding claims, wherein the system incorporates a presence detector determining the placement of the security mark on the document to be recognized.

35 7.- A system according to any of the preceding claims, wherein the light source

is provided with a filter for achieving the necessary monochromatic character.

8.- A system according to any of the preceding claims, wherein the light source comprises a diode laser.

5 9.- A system according to claim 8, wherein the diode laser is a modulated frequency diode laser (1).

10 10.- A system according to any of the preceding claim, the system being arranged to analyze relative intensities of light emitted by the excitable substance at different wavelengths ( $\lambda_1$ - $\lambda_9$ ) detected by the respective detector assemblies (3), the wavelengths being determined by the respective filters (5) integrated in the respective detector assemblies.

15 11.- A system according to any of the preceding claims, the system being arranged to determine, with the definition of a threshold, the existence or non-existence of emission of light by the excitable substance, at different wavelengths ( $\lambda_1$ - $\lambda_9$ ) detected by the respective detector assemblies (3), the wavelengths being determined by the respective filters (5) integrated in the respective detector assemblies.

12.- A system for recognizing documents according to any of the preceding claims, wherein the detector assemblies (3) are arranged for detecting light emitted, by reflection, by the excitable substance of the security mark.

20 13.- A system for recognizing documents according to any of claims 1-11, wherein the detector assemblies (3) are arranged for detecting light emitted, by transmission, by the substance of the security mark.

CLAIMS

1.- A system for recognizing documents provided with a security mark comprising a substance which is excitable when a light coming from a corresponding light source is emitted on it so as to emit light at different wavelengths, the system  
5 comprising

a monochromatic light source for exciting the substance; and

at least two detector assemblies (3) for detecting light emitted by the excitable substance of the security mark of the document to be recognized;

each detector assembly (3) being associated to a system for electronic  
10 processing defined by a filter (7) and an amplifier (8), connected to a single microprocessor;

each detector assembly (3) being integrated in a body (9) that groups together all the detector assemblies (3) for detecting the light emitted by the excitable substance of the security mark, said detector assemblies being directed towards a common point,  
15 in order that the intensities of the light emitted by the mark, at different wavelengths ( $\lambda_1$ - $\lambda_9$ ), be detected by the detector assemblies, the microprocessor being arranged to analyze the detected light intensities at different wavelengths comparing them with a set of values stored in a memory of the microprocessor, for the purpose of determining whether the document recognized is an authentic document or a counterfeit document.

20 2.- A system according to claim 1, wherein the light source comprises a diode laser (1) of small dimensions and with focused light, so that all of the light output is at a narrow wavelength and at one point.

3.- A system according to claim 1 or 2, wherein each detector assembly (3) is defined by a photodiode (4), a filter (5) and a lens (6), duly encapsulated.

25 4.- A system according to claim 3, wherein the filters (5) are selected so that different detector assemblies (3) detect the intensity of light corresponding to different wavelengths ( $\lambda_1$ - $\lambda_9$ ).

5.- A system according to any of the preceding claims, wherein the elements forming part of the system are arranged so that the detection path length is very short,  
30 whereby a better optical tolerance with regard to the banknote pass distance, and a small-sized and low cost equipment, are obtained.

6.- A system according to any of the preceding claims, wherein the system incorporates a presence detector determining the placement of the security mark on the document to be recognized.

35 7.- A system according to any of the preceding claims, wherein the light source

is provided with a filter for achieving the necessary monochromatic character.

8.- A system according to any of the preceding claims, wherein the light source comprises a diode laser.

5 9.- A system according to claim 8, wherein the diode laser is a modulated frequency diode laser (1).

10 10.- A system according to any of the preceding claim, the system being arranged to analyze relative intensities of light emitted by the excitable substance at different wavelengths ( $\lambda_1$ - $\lambda_9$ ) detected by the respective detector assemblies (3), the wavelengths being determined by the respective filters (5) integrated in the respective detector assemblies.

15 11.- A system according to any of the preceding claims, the system being arranged to determine, with the definition of a threshold, the existence or non-existence of emission of light by the excitable substance, at different wavelengths ( $\lambda_1$ - $\lambda_9$ ) detected by the respective detector assemblies (3), the wavelengths being determined by the respective filters (5) integrated in the respective detector assemblies.

12.- A system for recognizing documents according to any of the preceding claims, wherein the detector assemblies (3) are arranged for detecting light emitted, by reflection, by the excitable substance of the security mark.

20 13.- A system for recognizing documents according to any of claims 1-11, wherein the detector assemblies (3) are arranged for detecting light emitted, by transmission, by the substance of the security mark.